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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/390,289	09/03/1999	JEFFREY S. DUGAN	709.36924X00	6666

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ARLINGTON, VA 22209

EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/18/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/390,289

Applicant(s)

DUGAN ET AL.

Examiner

Jenna-Leigh Befumo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-21, 24-30, 32-54, 62, 64-69 and 72-78 is/are pending in the application.

4a) Of the above claim(s) 32-54 is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 11-21, 24-30, 62, 64-69 and 72-78 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendment B, submitted as Paper No. 9 on April 24, 3003, has been entered. Claims 23, 31, 61, 63, 70, and 71 have been cancelled. Claims 9, 12, 20, 30, 64, and 67 have been amended and claims 73 – 78 have been added. The Examiner notes that the added claims in Amendment B were renumbered from the original numbers, 72 – 77, to 73 – 78, since the Application already contained a claim 72. Therefore, the pending claims are 9 – 21, 24 – 30, 32 – 54, 62, 64 – 69, and 72 – 78. Claims 32 – 54 are withdrawn from consideration as being drawn to a non-elected invention.
2. The proposed corrections to the drawing are sufficient to withdraw the objection set forth in section 6 of the previous Office Action.
3. The Applicant's arguments (Amendment B, pages 7 – 8) are sufficient to overcome the objection set forth in section 7 of the previous Office Action.
4. Amendment B is sufficient to overcome the 35 USC 112 1<sup>st</sup> paragraph rejection to claim 12 set forth in section 9 of the previous Office Action. Additionally, the cancellation of claim 61 renders moot the 112 1<sup>st</sup> paragraph rejection set forth in section 10 of the past Office Action.
5. Amendment B overcomes the 35 USC 112 2<sup>nd</sup> paragraph rejection set forth in section 13 of the previous Office Action. Also, the cancellation of claim 61 renders moot the 112 2<sup>nd</sup> paragraph rejection set forth in section 14 of the past Office Action.
6. Amendment B is sufficient to overcome the 35 USC 102 rejection based on Murase et al. (5,718,972) since the second polymer component is not “substantially only at the cross-over

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points.” Murase et al. discloses that the second polymer component can still be in fiber form in parts of the yarn. Additionally, the 103 rejection also based on Murase et al. is withdrawn.

7. The Applicant’s arguments (amendment B, pages 15 – 17) are sufficient to overcome the 35 USC 102 rejection based on Heagle et al. (5,290,449) since the nonwoven fabric includes a mixture of glass fibers and thermoplastic fibers bound together by the binder material, i.e., a melted binder fiber, the binder material would not be located substantially only at the intersection of the thermoplastic fibers to themselves, but at the intersections of the glass and thermoplastic fibers as well as the glass fibers to themselves.

#### ***Claim Objections***

8. Claim 77 is objected to because of the following informalities: the phrase “the thermal bonding the second polymer material” is grammatically awkward. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 9, 11 – 21, 24 – 30, 62, 64 – 69, and 72 – 78 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwang (4,514,455).

The features of Hwang have been set forth in section 18 of the previous Office Action. The amended claims as well as the added claims are rejected for the reasons set forth in the previous Office Action.

#### ***Allowable Subject Matter***

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11. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

12. Applicant's arguments filed April 24, 2002 have been fully considered but they are not persuasive. The Applicant argues (Amendment B, pages 11 – 12) that Hwang fails to teach a nonwoven material made from multicomponent fibers which have been at least partially split. However, as noted in the previous Office Action “splitting the multicomponent fibers” prior to melting is a method limitation and is not given any patentable weight at this time. The determination of patentability of an article is based on the structure of the final product and not on the method steps used to produce the final product, unless the method is shown to produce a materially different product. In this case, the final product is a nonwoven comprising fibers made from a first polymeric material which are bonded together at the cross-over points by a second polymeric material. Hence, the melting step is given weight since it changes the second polymeric fiber to a binder material which is located at the cross-over points. Until the Applicant clearly demonstrates that using a multicomponent fiber as the starting material and splitting the fiber before melting will produce a materially different end product than blending two different types of fibers together and melting the lower melting fiber, the starting material used to create the final product, i.e., the multicomponent fiber, and the splitting step are not given patentable weight. While it is noted that the Applicant states the product produced by the Applicant's invention has both improved strength and softness (Amendment B, page 19), this is not sufficient to show that the end product is different from the prior art since the Applicant has

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not shown any direct comparisons of the strength and softness of Applicant's invention as compared to the product produced by Hwang. Further, it is noted that the features upon which applicant relies (i.e., improved strength and softness) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

13. Further, the Applicant argues that melted binder material taught by Hwang would not inherently be found substantially only at the cross-over point and would not encapsulate the cross-over points (Amendment B, pages 18 – 19). First it is noted, in the Applicants previous reply, the Applicant stated that the binder material is located at the cross-over points of the fibers by melting the second polymeric material until it flows (Amendment A, pages 10 – 13). Further, the Applicant states, the melted polymeric material will inherently flow to the cross-over points. Hence, the Applicant's final product, i.e., the binder material located substantially only at the cross-over points of the fibers, and even the encapsulated cross-over points are produced by melting the binder material until it is liquid, and then it will flow to and encapsulate the cross-over points. The Applicant argues that Hwang discloses that the binder material is heated and then coalesces on the surfaces or at the cross-over points of the fibers and thus, would not disclose a product with the binder material "substantially only" at the cross-over points of the fibers. Nor would the binder material inherently encapsulate based on this disclosure by Hwang.

This argument is traversed since the Applicant produces the encapsulated cross-points by simply melting the binder material until it is allow to flow. The Applicant has not disclosed a particular time or temperature which is needed to produce this effect. The encapsulated cross-

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over points are simply a result of the binder material being melted and allowed to flow, as demonstrated by the Applicant's arguments in Amendment A. Hwang discloses in Example II that the nonwoven is heated for 15 minutes at a temperature of 130°C in a relaxed state. Hence, the binder material is given time to melt and flow, which is what the Applicant states is required to produce the claimed product. Further, even the Applicant cannot produce an end product where the binder material isn't located somewhere other than at the cross-over points, as demonstrated by the Applicant's claim that the binder material is *substantially* only at the cross-over points. While a majority of the binder material will flow to the cross-over points some material will end up on the fiber surface between cross-over points.

Additionally, it is known that heating a nonwoven web comprising binder fibers to a temperature above the melting point of the binder fiber while relaxed will produce a nonwoven fabric with binder material located substantially only at the cross-over points. Marshall (4,083,913), Peoples, Jr. (4,568,581), and Geary et al. (EP 0 555 345 B1) all disclose nonwoven materials formed by completely melting the binder. Marshall discloses that the binder material melts to produce a fluid beads with complete loss of fiber identity, and the beads locate principally at the cross-over points of the fibers (column 3, lines 64 – 68). The nonwoven is heated under zero pressure to produce the bonded nonwoven (column 3, lines 55 – 65).

Additionally, Marshall discloses that while the majority of the binder material forms beads at the cross-over points some of the binder material will remain on the fiber surface between two cross-over points (column 7, lines 15 – 23). Peoples, Jr., as shown in Figures 4 and 5, disclose a nonwoven comprising binder fiber which upon melting forms fusion bonds 16 at the cross-over points of the nonwoven (column 4, lines 32 – 40). And finally, Geary et al. discloses melting the

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binder material, by passing it through a convection oven, to form globules that bridge the cross-over points and form bead-like globules (column 4, lines 35 – 45). Therefore, the heated binder material would not only inherently bead up upon heating, but would also inherently be *substantially* located only at the cross-over points of the fibers in the nonwoven. Further, the bead or globule shape would inherently encapsulate the fibers intersection when the material is heated and allowed to flow freely based on the pictures in these three references which show the intersections surrounded with binder material. Thus, based on the method taught by the Applicant to produce the bonded and encapsulated cross-over points, and on the evidence provided by Marshall, Peoples, Jr. and Geary et al. demonstrating that binder material which is heated and allowed to flow will bind the cross-over points and further encapsulate the cross-over points, the limitations that the binder material is *substantially* only at the cross-over points of the fibers are inherent to the method and product taught by Hwang. Hence, the rejections over Hwang are maintained.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo  
July 9, 2002



CHERYL A. JIVSKA  
PRIMARY EXAMINER